

REMARKSRequest for Reconsideration

Applicant has carefully considered the matters raised by the Examiner in the outstanding Office Action but remains of the position that patentable subject matter is present. Applicant respectfully requests reconsideration of the Examiner's position based on the above amendments to the claims and the following remarks.

Claims Status

Claims 1-7 are pending in this Application. Claims 1 and 7, which are the independent claims, have been amended herein to recite that the maximum amount of ink to be jetted is a function of the image recording speed. Support for this amendment can be found on page 4, fifth paragraph, page 5, first and second paragraphs, pages 5-6 bridging paragraph, page 6, second paragraph, page 7, first paragraph, page 8, first paragraph and the examples. Each of these portions of the Specification teach that the maximum amount of ink to be jetted is changed with recording mode and each recording mode has a different speed. Thus, the maximum amount of ink to be jetted is based on the recording speed.

It is respectfully requested that the amendment be entered, even though this is a Final Action. The amendment was not previously made because it was deemed that both Claims 1 and 7 required that the maximum amount of ink that was jetted was a function of recording speed. In the last Office Action, the Examiner stated that he did not consider that the claims required that the amount of ink to be jetted to be a function of recording speed. Thus, in order to make explicit, what was deemed to be implicit, the independent claims have been amended herein.

Furthermore, it is respectfully submitted that this amendment puts the claims in condition for allowance and thus advances prosecution of the Application.

Invention

One of the novel aspects of the present Invention is that the amount of ink that is applied to the recording medium is a function of recording speed. With respect to ray curable inks, it is important that the ink be irradiated for a sufficient length of time in order to insure curing of the ink. Thus, in high speed recording modes, the amount of ink that is jetted is decreased, while in low speed recording modes, the amount of ink that is

jetted is increased. Thus, the relationship of speed and the amount of ink is key for an image recording system with ray curable ink. If the recording medium passes through the apparatus too quickly, then the amount of irradiation which is applied on the unit area of the recording medium is decreased, thereby decreasing also the ray curing. Applicant found that if speed was increased and the amount of ink was maintained that the ink would not fully cure. Applicant discovered that in order to solve the problem of this incomplete curing, the amount of ink should be a function of the recording speed. This aspect of the present Invention is brought out in the two full paragraphs that appear on page 46 of the Application.

This aspect of the present Invention is also brought out in the Tables which were attached to the Application. For example, in Figure 5, resolution of Samples 1 through 5 is maintained at 720 dpi. However, a comparison should be made between Recording conditions 1, 4 and 5. Recording condition 1 is a basic recording condition from which Samples 4 and 5 are compared. In Recording conditions 4 and 5, the speed of the recording medium through the apparatus has been doubled. In Recording condition 4, however, the amount of ink applied per even area of paper

is the same as Recording condition 1, the maximum amount of ink adhered to both Recording conditions 1 and 4 is 23.6 ml/m². It can be seen by comparing condition 1 to 4 that, although the same resolution is maintained and that the same amount of ink is applied per even area, the quality of recording is decreased. Ink blurring drops from A to B, adhesion drops from A to C, wrinkle drops from A to C. Thus, when comparing Recording conditions 1 to 4, it can be seen that by doubling the recording speed while maintaining the same amount of ink, a decrease in the quality is obtained.

Recording conditions 1 to 4 should be contrasted against Recording condition 5. In Recording condition 5, the amount of ink is decreased by half, to, i.e. 14.8 ml/m². As shown in Recording condition 5, the amount of ink is decreased yet the quality (blurring, adhesion and wrinkle) is maintained at approximately that of Recording condition 1. Thus, by comparing conditions 1, 4 and 5, it can be seen that, by making the amount of ink a function of speed, the quality of the image is maintained. Specifically, it can be seen that the amount of ink is inversely proportioned to the speed at which the machine is operated.

The claims had required that the apparatus have a plurality of recording modes and that each of the recording modes had a different recording speed. The amount of ink to be jetted was varied depending upon the recording modes. Since each recording mode had a different recording speed, it was deemed that the maximum amount of ink that was jetted was a function of recording speed.

In the Office Action, the Examiner took the position that the claims were not limited to reciting that the amount of ink was a function of recording speed. Thus, the claims, as amended herein, specifically highlight the fact that the ink that is jetted is a function of the recording speed.

Prior Art Rejection

Claims 1-4, 6, and 7 have been rejected as being unpatentable over a combination of Mills and Moriyama, while Claim 5 has been rejected as being unpatentable over a combination of Mills, Moriyama and Hintermann.

Moriyama teaches, at Column 6, lines 25-55, that the amount of ink is a function of resolution (dpi). Resolution is measured in dpi and not the speed at which the recording medium passes through the printer.

In fact, as noted above, conditions 1 and 4 specifically illustrate the fact that, by maintaining dpi while increasing speed, the quality of resolution decreases. This is in direct contrast with present Invention which is teaching that ink is a function of recording speed not a function of resolution.

Turning to the other cited references, neither Mills nor Hintermann teach or suggest making the amount of ink to be jetted a function of recording speed. Thus, it is respectfully submitted that the references taken alone or in combination do not teach or suggest an apparatus where the ink that is jetted is a function of speed at which the recording medium passes through the apparatus.

Conclusion

In view of the foregoing, it is respectfully submitted that the Application is in condition for allowance and such action is respectfully requested. Should any fees or

extensions of time be necessary in order to maintain this Application in pending condition, appropriate requests are hereby made and authorization is given to debit Account # 02-2275.

Respectfully submitted,

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